

**SECTION IV: TECHNICAL SPECIFICATION**

**Project:** PROPOSED COMPLETION OF UNIVERSITY LIBRARY AT SOGOD CAMPUS  
**Location:** SLSU-MAIN CAMPUS, SOGOD, SOUTHERN LEYTE  
**Owner:** SOUTHERN LEYTE STATE UNIVERSITY

ITEMS		DETAILS
<b>I MOBILIZATION</b>		
1.0	Mobilization/Demobilization/Site Clearing	Contractor shall mobilize and put into operation all equipment and plants required to undertake the Bid Documents, which is the Bill of Quantities and all associated work items. Demobilization includes the clean-up of the site and the removal of materials, debris, waste, etc., and making good damages or temporary alterations, restoration of damages to the surrounding area (including vegetation, minor structures etc) resulting from the construction or construction-related activities.
2.0	Temporary Facilities	Contractor shall, as a priority in all his activities, undertakings and endeavors, ensure the continued and continuous safety of the public and all persons directly or indirectly associated with the Works. During the entire process of constructing the Works -- including preparation of the site and final clean up upon completion -- the Contractor shall exercise the utmost care in order to prevent damage to the environment and adjoining properties. Due precautions shall be taken by the Contractor, at his own cost, to ensure the safety and protection against accidents of all staff and labor engaged on the Works and the public in the vicinity of the Works. The Contractor will be responsible for the safety of the public legitimately passing through the site. All excavations and items of potential danger to the public must be barricaded and sign-posted to the satisfaction of the Engineer, and the Contractor must provide sufficient watchmen to ensure the safety of the public at all times. Contractor shall include the Project billboard and provision for construction safety and health.
<b>II EARTHWORKS</b>		
1.0	Excavation	Labor only. Volume of footing, wall footing if any
2.0	Backfilling Materials	Labor only. All excavations shall be backfilled immediately as work permits. Filling materials shall be made in layers not to exceed 15cm and thoroughly tamped before the next fill is placed
3.0	Lines and grades	Labor only. Operation shall start from areas affected by the construction to limits indicated by the Owner and or as specified.
<b>III CONCRETING WORKS</b>		
1.0	Concrete	
1.1	Structural Members	Maximum Compressive Strength at 28 days = 21 MPa (3000psi),
1.1.1	Cement	Portland Cement (Type1) in 40kgs. Use one brand of cement all through-out acceptable to the Engineer in-charge.
1.1.2	Sand	Washed Sand. Uncoated granules, strong, durable, reasonably clean and free from organic matter
1.1.3	Gravel	Crushed Gravel (3/4"). Uncoated granules, strong, durable, reasonably clean and free from organic matter
1.1.4	Mixture	Class AA concrete mixture ( 1 : 1-1/2 : 3 ratio ) , 0.53 water / cement ratio
2.0	Rebars	
2.1	Structural Members	
2.1.1	Reinforcing Bars	Deformed type reinforcing bars (Grade 40)
2.1.2	Material	Deformed Rebars, G.I. Tie Wire # 16
2.1.3	Typical Plan	Refer to Structural plans for details
<b>IV FORM WORKS</b>		
1.0	Formworks & Shoring	
1.1	Formworks-Column	
1.1.1	Material Specification	2" x 2" x 10' cocolumber, 2" x 2" x 8' cocolumber, 1/2" Plywood, Common Nail 2", Common Nail 3"
1.5	Shoring	
1.5.1	Material Specification	2" x 3" x 12' cocolumber, Common Nail 3" or equivalent shoring material
<b>IV MASONRY WORKS</b>		
1.0	Wall and Plant Box	6" Ordinary Concrete Hollow Blocks
1.1	Concrete Mortar	
1.1.1	Cement	Portland Cement
1.1.2	Sand	White Sand (S1)
1.1.3	Mixture	Class A mortar mixture (1 : 2 ratio)
1.2	Reinforcing Bars	
1.2.1	Reinforcing Bars	Deformed type reinforcing bars (Grade 33)
1.2.2	Material	Deformed Steel Bar G.I. Tie Wire # 18
1.2.3	Typical Plan	Refer to Structural plans for details
<b>V CEILING AND PARTITION WORKS</b>		
4.1	Ceiling	Light Metal Frame, 0.60m
4.1.1	Wall Angle	25mm x 25mm x 0.4mm thick, 2.40m, Ga 26, wall angle fastened to wall
4.1.2	Double Furring	19mm x 50mm x 0.4mm thick, 5m, Ga 26, double furring at board terminations only
4.1.3	Carrying Channel	12mm x 38mm x 0.80mm thick, 5m, Ga 22 carrying channel with double furring clip (W-clip) to fasten carrying channel and double furring spaced at 1.20m O.C.
4.1.4	Single Furring	19mm x 25mm x 0.4mm, 5m, Ga 26 thick single furring spaced at 0.60m O.C.
4.1.5	Accessories	Double Furring Clips, Hardi Screws (6mm dia. X 3/4"), Blind Rivets (1/8" dia. X 1/2"), Fanhead Screws for Wall Angle to Furring Connection, Concrete Nail 1" for Wall Angle to Wall Connection
4.1.6	Sheeting	1/4" thick fiber cement board (4' x 8'). Allow 5mm gap in all terminations
4.2	Toilet Cubicle & urinal privacy screen	
4.2	Material and Accessories	Blade Mounted Overhead Braced (new graphite color) in 13mm Compact Laminate. With Total Privacy Solution. Door Furniture to be surface mounted Diecast Zinc, Alloy ZP3 (Satin Matte Black) Easy-Glide Slide Lock & indicator with Concealed Screw Fix. Aluminium to be Square Clear Anodised. Screw fixing.
<b>VII DOORS AND WINDOWS</b>		
1.0	Doors and Windows	
1.1	Panel Door	panel w/ door jamb and design mahogany (see schedule of doors and windows for additional detail)
1.2	Glass Swing Doors	Powder Coated Frame & concealed heavy duty door closer (see schedule of doors and windows for additional detail)
1.3	Awning Window	Powder Coated Frame & concealed heavy duty door closer (see schedule of doors and windows for additional detail)

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ITEMS		DETAILS
1.4	Fixed Glass	Frameless tempered glass with complete fittings and accessories (see schedule of doors and windows for additional detail)
2.0	Fixed Glass and Glass Door with Sensor	
2.1	Lobby Entrance	Automatic sliding Frameless Tempered Glass Sensor Operated Door and Fixed glass Partition, with complete fittings and Accessories including fabrication and installation
<b>VIII TILE WORKS</b>		
1.0	Tile Works	
1.1	Hallway Basement and Stair lobby entrance	0.60m x 0.60m (Textured Floor Tiles)( for approval of MTI)
1.2	Male & Female Toilet	0.60m x 0.60m (Floor tiles) ( for approval of MTI)
1.3	Floor tiles Presidential & Guest CR	24" x 24" (600mm x 600mm)( for approval of MTI)
1.4	1st floor Main Library	0.80m x 0.80m (Polished Floor Tiles) ( for approval of MTI)
2.1.1	Terminations	Grout Termination, White
2.1.2	Nosing	Stair Nosing 1½" x 3m. Brass
<b>IX PAINTING WORKS</b>		
1.0	Painting Works	
1.1	Wall	1 coat skimcoat (Primer), 2 coats semi-gloss latex Use # 120 sandpaper
1.1.1	Color	as per approved by MTI
1.2	Eaves and Ceiling Vent	Epoxy adhesive, 2 coats semi-Flat Wall Enamel Use # 120 sandpaper
1.2.1	Color	as per approved by MTI
<b>X SANITARY</b>		
1.0	Pipes and Fittings-Waterline	1/2" x 3 meters PPR Pipe, 1/2" PPR Plain Tee, 1/2" PPR Threaded Elbow, 1/2" PPR Plain Elbow, 1/2" PPR Threaded Tee, 1/2" PPR End Cap, Teflon Tape 1/2", Solvent Cement (400 cc), Male Adapter 1/2"
2.0	Pipes and Fittings-Sanitaryline	4" X 3.00m PVC Orange pipe S-1000, 2" X 3.00m PVC Orange pipe S-1000, 2" X 3.00m PVC Orange pipe S-1000, PVC Orange Elbow, Wye, Tee, (Refer to Plumbing drawings for connections), PVC Orange Bushing Reducer 4" X 2", PVC Orange P-trap 2", PVC Orange clean out with 4" cap
3.0	Plumbing Fixtures	
3.1	Water Closet	Water Closet with Sensor Operated Concealed Toilet flush valve & comp. Accessories (Soap & Tissue Holder)
3.2	Lavatory	Counter top lavatory with flexible hose, angle valve, P-trap, drainage pipe and bracket
3.2	Counter Top	Granite Counter Slab, 0.60m x 2.40m Galaxy black
3.3	Lavatory Faucet	Chrome plated faucet
3.4	Foot Faucet	Plain Bibb Faucet (1/2" x 4") - Chrome
3.5	Urinal	0.125 gpf Urinal with Concealed Sensor urinal flush valve & comp. Accessories
3.6	Other Accessories	4" x 4" (100mm x 100mm) Stainless floor drain,
<b>XI RAILINGS AND OTHER ARCHITECTURAL</b>		
1.0	Railings, Louvers and Ladder Cages	Prefab 38mmØ 304 Stainless pipe 20mmØ Stainless Steel Plain Round bar (standard)
<b>XII ELECTRICAL</b>		
1.0	Roughing Ins	
1.1	Circuit Breaker and Branch	Refer to Electrical details and design analysis
1.2	Conduits - Main Line	PVC Utility Box 2"x4", PVC Junction Box 4"x4", service entrance cap 1½" Ø
1.3	Conduits Powerline	PVC Rigid Conduit 3/4" x 3m, 3/4" Long Elbow
1.4	Conduits Lighting line	1/2" Polyflex, PVC Rigid Conduit 1/2" x 3m, 1/2" Long Elbow
1.5	Conduits - ACU	PVC Rigid Conduit 1/2" x 3m, 1/2" Long Elbow, 1/2" Long Elbow
1.6	Wiring Mainline	200 mm², THHN Wire (Stranded)
1.7	Wiring Lightingline	3.5 mm², THHN Wire (Stranded)
1.8	Wiring Powerline	5.5 mm², THHN Wire (Stranded), 8.0 mm², THHN Wire (Stranded) (ACU)
1.9	Wiring Rough-ins	PVC Utility Box 2"x4", PVC Junction Box 4"x4", service entrance cap 1½" Ø
2.0	Finishing	
2.1	Switches	Switch, Flush Type,Single-Gang , 2-Gang "Wide series"3-Gang "Wide series"
2.2	Outlets	Duplex Convenience Outlet, Flush Type "Wide series", ACU Outlet, Flush Type,1-Gang "Wide series"
3.0	Fixtures	
3.1	Refer to Plan for Location	LED Downlight, 18 Watts (Flush Mounted)(Day Light)
3.2	Refer to Plan for Location	LED Circular Downlight, 18 Watts (Flush Mounted)(Day Light)
3.3	Refer to Plan for Location	LED Circular Downlight, 12 Watts (Flush Mounted)(Day Light)
3.4	Refer to Plan for Location	LED-PANEL Light, 600mmx600mm, 36w-220V(Day Light)(Flush Mounted)
3.5	Refer to Plan for Location	LED-PANEL Light, 600mmx600mm, 36w-220V(Day Light)(Surface mounted)
3.6	Refer to Plan for Location	LED Downlight, 18 Watts , (Surface mounted) (Day Light)
3.7	Refer to Plan for Location	Flexible Waterproof LED Strip light,AC220V with EU power plug, 120 led/m. 2835 SMD High brightness (Warm White)
3.8	Refer to Plan for Location	LED Circular Drop Light, 18 Watts (Day Light)
3.9	Refer to Plan for Location	Hand Dryer
<b>XIV TESTING</b>		
1.0	Testing	
1.1	Concrete	Contractor is required to submit test certificate prior to concrete pouring
1.2	Rebar	Contractor is required to submit test certificate prior to concrete pouring
1.3	Waterline	All waterline shall undergo flood and leak testing prior to finishing and before acceptance.

Prepared by: